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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,996	06/06/2000	Hisashi Ohtani	07977/220002/US3527/3777D	9311

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FISH & RICHARDSON P.C.
1425 K STREET, N.W.
11TH FLOOR
WASHINGTON, DC 20005-3500

EXAMINER	
CHUNG, DAVID Y	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/588,996	OHTANI ET AL.	
	Examiner	Art Unit	
	David Y. Chung	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,11-16,20-22 and 26-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1* is/are allowed.

6)☒ Claim(s) *2,4-7,11-16,20-22 and 26-31* is/are rejected.

7)☒ Claim(s) *32-38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/008,412.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 20, 2004 has been entered.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 14-16 and 20-22 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sato et al. (U.S. 5,708,485).

As to claims 14 and 20, Sato et al. discloses an active matrix display device having a structure as shown in figures 1 and 2. Note the thin film transistor 7, semiconductor thin film 10, source line 9, gate line 8, pixel electrode 6, matrix array substrate 1, opposing substrate 2, and liquid crystal layer 3. A storage capacitor 13 is formed between semiconductor thin film 10 and auxiliary line 14.

Sato et al. is silent regarding the occurrence of disclination. However, Hirata et al. provides evidence that disclination is inherent in the device of Sato et al. in regions comprising the thin film transistor and storage capacitor. Hirata et al. discloses a conventional active matrix device in figure 17 having a light blocking film 232d with an opening corresponding with an area enclosed by the dashed line. See column 18, lines 31-38. The light blocking film 232d is provided in order to prevent deterioration of the display quality occurring due to the disclination in the region outside the dashed line. Since disclination deteriorates the display quality of a wide area corresponding to the pixel electrodes 114, the opening of the light blocking film 232d is required to be reduced in size. See column 18, lines 60-66.

Because Sato et al. is substantially identical to the claimed invention and Hirata et al. presents evidence tending to show the inherency of disclination, the burden shifts

to the applicant to show an unobvious difference. *In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).* See MPEP §§ 2112 - 2112.02.

As to claims 15 and 21, Sato et al. discloses a top-gate thin film transistor in figure 1.

As to claims 16 and 22, because the recitation of intended use does not result in a structural difference between the claimed invention and the prior art of Sato et al., it does not patentably distinguish the claims from Sato et al. If the prior art structure is capable of performing the intended use, the claims are considered met. See MPEP § 707.07.

2. Claim 2 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sato et al. (U.S. 5,708,485).

Sato et al. discloses an active matrix display device having a structure as shown in figures 1 and 2. Note the thin film transistor 7, semiconductor thin film 10, source line 9, gate line 8, and pixel electrode 6. A metal interconnection 12 is electrically connected to the drain of the thin film transistor and the pixel electrode 6. An insulating layer 17 is formed over the source line and a conductive light blocking film 16M is formed over insulating layer 17. The conductive light blocking film 16M and metal interconnection 12 partially overlap to form a capacitor. Sato et al. teaches that the

interlayer insulating layers 15, 17 and 18 may be formed of inorganic or organic substances. See column 7, lines 55-60.

Because the recitation of intended use does not result in a structural difference between the claimed invention and the prior art of Sato et al., it does not patentably distinguish the claims from Sato et al. If the prior art structure is capable of performing the intended use, the claims are considered met. See MPEP § 707.07.

Sato et al. is silent regarding the occurrence of disclination. However, Hirata et al. provides evidence that disclination is inherent in the device of Sato et al. in regions comprising the thin film transistor and capacitor. Hirata et al. discloses a conventional active matrix device in figure 17 having a light blocking film 232d with an opening corresponding with an area enclosed by the dashed line. See column 18, lines 31-38. The light blocking film 232d is provided in order to prevent deterioration of the display quality occurring due to the disclination in the region outside the dashed line. Since disclination deteriorates the display quality of a wide area corresponding to the pixel electrodes 114, the opening of the light blocking film 232d is required to be reduced in size. See column 18, lines 60-66.

Because Sato et al. is substantially identical to the claimed invention and Hirata et al. presents evidence tending to show the inherency of disclination, the burden shifts to the applicant to show an unobvious difference. *In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980)*. See MPEP §§ 2112 - 2112.02.

As to claim 12, Sato et al. discloses a top-gate thin film transistor in figure 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 4-7, 11-13 and 26-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. 5,708,485) in further view of Ueda et al. (U.S. 5,459,596), Miyazawa (U.S. 5,781,260), Hanazawa et al. (U.S. 5,835,171), and Koseki et al. (U.S. 5,345,324).

As to claims 4, 5, 7, 11, 13, 26, 28, 29 and 31, Sato et al. discloses an active matrix display device having a structure as shown in figures 1 and 2. Note the thin film transistor 7, semiconductor thin film 10, source line 9, gate line 8, and pixel electrode 6. A first insulating layer 15 is formed over the thin film transistor. A metal interconnection 12 electrically connects the pixel electrode to the drain of the thin film transistor through a contact hole formed in insulating layer 15. The conductive light blocking film 16M and metal interconnection 12 partially overlap to form a capacitor with a second insulating layer 17 interposed between.

Because the recitation of intended use does not result in a structural difference between the claimed invention and the prior art of Sato et al., it does not patentably

distinguish the claims from Sato et al. If the prior art structure is capable of performing the intended use, the claims are considered met. See MPEP § 707.07.

Sato et al. is silent regarding the occurrence of disclination. However, Hirata et al. provides evidence that disclination is inherent in the device of Sato et al. in regions comprising the thin film transistor and capacitor. Hirata et al. discloses a conventional active matrix device in figure 17 having a light blocking film 232d with an opening corresponding with an area enclosed by the dashed line. See column 18, lines 31-38. The light blocking film 232d is provided in order to prevent deterioration of the display quality occurring due to the disclination in the region outside the dashed line. Since disclination deteriorates the display quality of a wide area corresponding to the pixel electrodes 114, the opening of the light blocking film 232d is required to be reduced in size. See column 18, lines 60-66.

Because Sato et al. is substantially identical to the claimed invention and Hirata et al. presents evidence tending to show the inherency of disclination, the burden shifts to the applicant to show an unobvious difference. *In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980)*. See MPEP §§ 2112 - 2112.02.

Sato et al. does not disclose rubbing an alignment layer in one direction from one corner of the pixel. However, this was common and conventional at the time of invention as evidenced by the disclosures of Koseki et al., Hanazawa et al., Miyazawa, and Ueda et al. See column 20, line 53 – column 21, line 4 of Ueda et al. Note in figure 3 of Miyazawa, the crossed arrows denoting the direction of the alignment treatment on the upper and lower substrates, respectively. Note in figure 7 of Hanazawa et al., the

diagonal arrow denoting the rubbing direction of the orientation film. Note in figures 5A, 7A and 8-10 of Koseki et al., arrow 9 showing the rubbing direction. The benefits of this conventional rubbing technique included lowering manufacturing costs and producing a device with predictable behavior. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to rub the alignment layer in one direction from one corner of the pixel because of the aforementioned benefits.

As to claims 6, 12, 27 and 30, Sato et al. discloses a top-gate thin film transistor in figure 1.

Response to Arguments

Applicant's arguments filed September 20, 2004 have been fully considered but they are not persuasive. Applicant appears to have argued against the references individually without accounting for their combined teaching. Performing a rubbing operation in a diagonal direction starting in one corner of the pixel was conventional as shown by the secondary references. Furthermore, only claims 2 and 4 explicitly require the capactor to be formed in the corner of the pixel where the rubbing operation begins, as explained in the previous office action.

Allowable Subject Matter

Claim 1 allowed.

Claims 32-38 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (571) 272-2288. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.

KENNETH PARKER
PRIMARY EXAMINER

David Chung
GAU 2871
12/09/04